

Date: Monday, 29/10/2007 12:50:31 PM  
 User: Linda Lacelle

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : MOUNTING BRACKET  
 Job Number : 35362  
 Estimate Number : 10250  
 P.O. Number : N/A  
 This Issue : 29/10/2007 S.O. No. : N/A  
 Prsht Rev. : NC  
 First Issue : N/A Type : MACHINED PARTS  
 Previous Run : 35362  
 Written By :  
 Checked & Approved By :  
 Comment : Est D 02.03.18 Added Rev.B NG  
 (Issue this IPP with part number D2052)  
 Est Rev E now water jet 07-10-25 DD

Part Number : D2053  
 Drawing Number : D2053 REV-B  
 Project Number : N/A  
 Drawing Revision : B under review  
 Material : N/A  
 Due Date : 30/11/2007 Qty: 30 Um: 20 Each

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 M5052H32S090 5052-H32 .090 Sheet



Comment: Qty.: 0.0404 sf(s)/Unit Total : 0.8085 sf(s)  
 Material: 5052-H32, 0.090" Thick  
 (M5052H3S.090)  
 Batch: M 3019 HB 07-11-8

2.0 WATER JET FLOW WATER JET



Comment: FLOW WATER JET  
 1-Cut as per Dwg D2053  
 Dwg Rev: PRE L.  
 Prog Rev: PRE L.

HB 07-11-8

2-Deburr if necessary

07/11/09 (31)

3.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

4.0 QC8 SECOND CHECK



Comment: SECOND CHECK

07-11-15 (31)  
 counted.

5.0 BRAKE NC NC BRAKE



Comment: NC BRAKE  
 Form as per Dwg D2053 using CNC Brake

JB

07/11/27

(31)

Date: Monday, 29/10/2007 12:50:31 PM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MOUNTING BRACKET

Job Number: 35362

Part Number: D2053

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

counts  
08/12/11 (X31)

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005

de

HA

07-12-12

(X31)

8.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Black Sandtex (Ref 4.3.5.8) as per QSI 005 4.3

M 100700

BR

08-01-08

(31)

9.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

MH

08/01/08

(31X)

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 9

8.1.19

SD

(31X)

11.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/01/11

(31)

Job Completion



2008/1/10

U

Date: Thursday, 10/25/2007 10:05:51 AM  
User: Kim Johnston

# **Process Sheet**

|                                    |  |                           |                  |
|------------------------------------|--|---------------------------|------------------|
| <b>Customer</b> :                  | CU-DAR001 Dart Helicopters Services                                      | <b>Drawing Name</b> :     | MOUNTING BRACKET |
| <b>Job Number</b> :                | 35362  | <b>Part Number</b> :      | D2053            |
| <b>Estimate Number</b> :           | 10250  | <b>Drawing Number</b> :   | D2053-REV B      |
| <b>P.O. Number</b> :               |  | <b>Project Number</b> :   | N/A              |
| <b>This Issue</b> :                | 10/25/2007   | <b>Drawing Revision</b> : | B                |
| <b>Prsht Rev.</b> :                | NC   | <b>Material</b> :         |                  |
| <b>First Issue</b> :               | / /  | <b>Due Date</b> :         | 11/30/2007       |
| <b>Previous Run</b> :              | 28201  | <b>Qty:</b>               | 20               |
| <b>Written By</b> :                |  | <b>Um:</b>                | Each             |
| <b>Checked &amp; Approved By</b> : |  |                           |                  |
| <b>Comment</b> :                   | Est D 02.03.18 Added Rev.B NG<br>(Issue this IPP with part number D2052) |                           |                  |

**Additional Product**

**Job Number:**



|                |                              |                      |
|----------------|------------------------------|----------------------|
| <b>Seq. #:</b> | <b>Machine Or Operation:</b> | <b>Description :</b> |
|----------------|------------------------------|----------------------|

|     |              |                     |
|-----|--------------|---------------------|
| 1.0 | M5052H32S090 | 5052-H32 .090 Sheet |
|-----|--------------|---------------------|



**Comment:** Qty.: 0.0677 sf(s)/Unit Total : 1.3545 sf(s)  
Material: 5052-H32, 0.090" Thick Batch \_\_\_\_\_  
(M5052H3S.090)  
Note: 1 Blank makes D2053 (Qty 1), D2052 (Qty 2)

*W. H. H. H. H.*



|     |       |       |
|-----|-------|-------|
| 2.0 | SHEAR | SHEAR |
|-----|-------|-------|



**Comment:** SHEAR  
Cut blanks 4.200" x 10.300", Grain along 4.200"



|     |       |                                |
|-----|-------|--------------------------------|
| 3.0 | HAAS1 | HAAS CNC VERTICAL MACHINING #1 |
|-----|-------|--------------------------------|



**Comment:** HAAS CNC VERTICAL MACHINING #1  
Machine as per folio D2053  
Identify as D2053



|     |     |  |
|-----|-----|--|
| 4.0 | QC2 | INSPECT PARTS AS THEY COME OFF MACHINE |
|-----|-----|--|



**Comment:** INSPECT PARTS AS THEY COME OFF MACHINE



|     |     |              |
|-----|-----|--------------|
| 5.0 | QC8 | SECOND CHECK |
|-----|-----|--------------|



**Comment:** SECOND CHECK



Dart Aerospace Ltd

| W/O: |      | WORK ORDER CHANGES                     |    |      |     |                                     |                          |
|------|------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE                       | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      | <i>Permit <del>change</del> change</i> |    |      |     |                                     |                          |
|      |      |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: D Date: 08/01/11  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR:     |      | WORK ORDER NON-CONFORMANCE (NCR)                                 |                                |   |   |                                |                                |                                |
|----------|------|--|--------------------------------|---|---|--------------------------------|--------------------------------|--------------------------------|
| DATE     | STEP | Description of NC<br>Section A                                   | Corrective Action Section B    |   |   | Verification<br>Section C      | Approval<br>Chief Eng          | Approval<br>QC Inspector       |
|          |      |  | Initial<br>Chief Eng           | Action Description<br>Chief Eng         | Sign &<br>Date                          |                                |                                |                                |
| 07/12/14 | #    | Drill a 0.063" hole<br>as per Dwg. D2053.<br>for Powder coating. | <i>[Signature]</i><br>07/12/14 | <del>Change program for water jet</del> | <i>N/A</i>                              | <i>[Signature]</i><br>07/12/14 | <i>[Signature]</i><br>07/12/14 | <i>[Signature]</i><br>07/12/14 |
|          |      |  |                                | Drill hole as per<br>Dwg. D2053         | FF<br>07/12/10                          |                                |                                |                                |
|          |      |  |                                | QC Inspection                           | <i>N/A</i>                              |                                |                                |                                |
|          |      |  |                                | Re Abolish as per D2005                 | 07-12-21<br>(X10)<br><i>[Signature]</i> | <i>[Signature]</i><br>2/12/21  |                                | <i>[Signature]</i><br>07/12/14 |
|          |      |  |                                |   |   |                                |                                |                                |

NOTE: Date & initial all entries

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MOUNTING BRACKET

Job Number: 35362

Part Number: D2053

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1  
Deburr

7.0

BRAKE NC

NC BRAKE



Comment: NC BRAKE  
Form as per Dwg D2053 using CNC Brake

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

9.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1  
Acid etch and Alodine as per QSI 005

10.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING  
Powder Coat Black Sandtex (Ref 4.3.5.8) as per QSI 005 4.3

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

12.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Identify and Stock  
Location: \_\_\_\_\_

13.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries



|                  |                |   |                        |
|------------------|----------------|---|------------------------|
| DESIGN<br>#      | DRAWN BY<br>RF | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br>#     | APPROVED<br>#  | DRAWING NO.<br>D2053                              | REV. B<br>SHEET 1 OF 1 |
| DATE<br>02.03.12 |                | TITLE<br>BRACKET                                  | SCALE<br>1:1           |
| A                | 92.01.12       | NEW ISSUE   |                        |
| B                | 02.03.12       | Ø0.635 WAS Ø0.437; 0.635 WAS 0.325                |                        |

RELEASED  
02.03.13

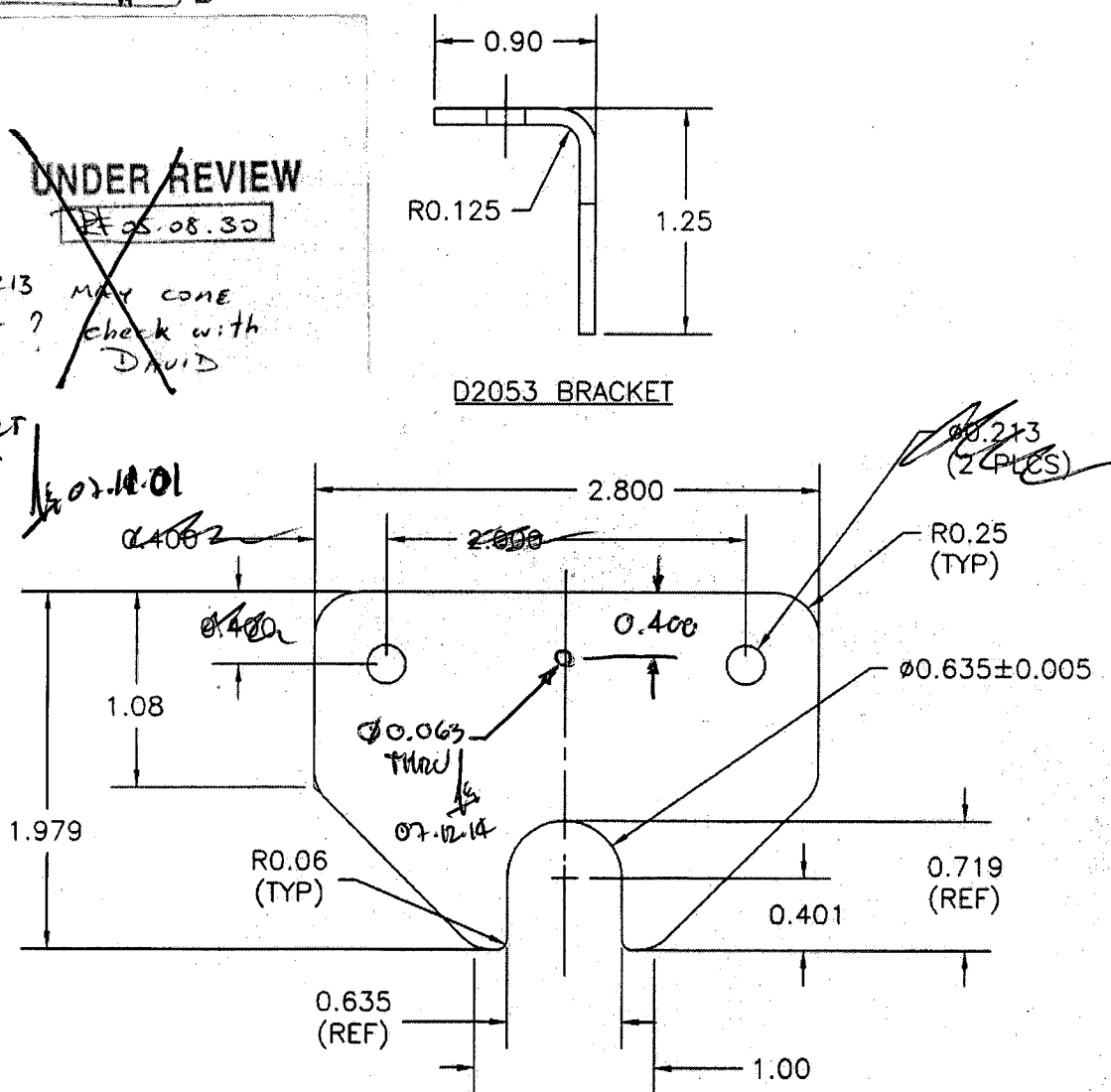
~~UNDER REVIEW~~

~~RF 05.08.30~~

Ø 0.213 MAY COME  
OUT? check with  
DAVID

MAKE PART  
WITHOUT  
HOLES.

02.10.01



D2053 FLAT PATTERN

MATERIAL: 5052-H32/-34 PER AMS 4016/4017 OR QQ-A-250/8, 0.090  
FINISH: POWDER COAT BLACK SANDTEX (4.3.5.7) PER DART QSI 005 4.3  
TOLERANCES ARE PER DART QSI 0.18 UNLESS OTHERWISE NOTED  
ALL DIMENSIONS ARE IN INCHES

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 35362

Copyright © 1992 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.





15

2.11.10

**David Duval**

---

**From:** Marc Bellavance [mbellavance@dartaero.com]  
**Sent:** Thursday, November 01, 2007 2:54 PM  
**To:** 'David Duval'  
**Subject:** FW: D206-558 -> D2053 Bracket  
**Attachments:** D2053-b.dxf

Dave,

Please find attached DXF files for D2053 Bracket.  
Take note that the holes are removed (see David Shepherd's email below).  
The drawing will be updated accordingly.  
Don't hesitate if you need Eng. to sign-off deviations on W/Os.

**Marc Bellavance**  
**Internal Support/Product Improvement**

***DART*** aerospace Ltd.

Tel: 613-632-5200 Ext. 240  
Fax: 613-632-9311  
E-mail: [mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)  
Web: [www.dartaero.com](http://www.dartaero.com)

---

**From:** David Shepherd [mailto:dshepherd@dartaero.com]  
**Sent:** November 1, 2007 2:49 PM  
**To:** 'Marc Bellavance'  
**Subject:** RE: D206-558 -> D2053 Bracket

Recommend making parts without holes from now on.

David

---

**From:** Marc Bellavance [mailto:mbellavance@dartaero.com]  
**Sent:** Thursday, November 01, 2007 9:57 AM  
**To:** 'David Shepherd'  
**Subject:** D206-558 -> D2053 Bracket  
**Importance:** High

David,

I got an e-mail from David Duval asking for D2053 Rev. B DXF file.  
He needs this to create the waterjet program to manufacture the flat pattern of the part.

Looking at the drawing, I have noticed that it is under review... since August 2005.  
Roberto put it under review and he added this note: "Ø0.213 may come out? Check with David".

I have looked at D206-558 Installation Instructions.  
The instructions to install the D2053 bracket indicate to pick up on existing nut plates (see page 4, note 3) but it is not specified whether the installer is required to drill holes through D2053 or not. I'm assuming that the holes must be there already.

Was there any plan to remove the holes?

11/1/2007

If this is the case, we would need to update the IIN accordingly.  
We might also need to update the ICA as well.

**Marc Bellavance**  
**Internal Support/Product Improvement**

***DART*** *aerospace Ltd.*

Tel: 613-632-5200 Ext. 240

Fax: 613-632-9311

E-mail: [mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)

Web: [www.dartaero.com](http://www.dartaero.com)

No virus found in this incoming message.

Checked by AVG Free Edition.

Version: 7.5.503 / Virus Database: 269.15.17/1103 - Release Date: 11/1/2007 6:01 AM

No virus found in this outgoing message.

Checked by AVG Free Edition.

Version: 7.5.503 / Virus Database: 269.15.17/1103 - Release Date: 11/1/2007 6:01 AM

11/1/2007